ABSTRACT OF THE DISCLOSURE

Multi-layer metal-shielded monolithic transmission lines are formed in side-by-side arrangement by depositing parallel planar thin film, conductive layers, separated by nonconductive separator layers to form a stack of alternating conductive and nonconductive layers. The conductive layers form a top and a bottom conductive plane and establish a mutually registered selected width of the stack. A center conductive layer has laterally spaced apart conductive strips separated by nonconductive spacer layers. The two laterally terminal of the conductive strips are spaced at the selected width. Each of the nonconductive separator layers provides a plurality of elongated vias between the two lateral terminals of the three conductive strips and the conductive planes. The vias are filled as each next metal deposition is applied for electrically interconnecting the conductive strips and planes so as to form a monolithic conductive shield about the centermost signal carrying conductor of the three conductive strips, providing electrical isolation in a coaxial arrangement.